

ILLUSIONS AUSTRALIA

SAFE WORK PROCEDURE

SWP 052 – MAGNETIC DRILL

1. PURPOSE AND SCOPE

Minimum requirements for safe use of magnetic-base drills at Illusions Australia.

Applies to drilling ferrous steel using a magnetic drill and suitable annular cutters/drill bits.

2. AUTHORISATION AND COMPETENCY

Only competent workers may use the magnetic drill.

Operators must understand magnetic holding force, material thickness/condition, cutter hazards, electrical supply, secondary restraint and coolant.

3. REQUIRED PPE

The following PPE must be worn as appropriate:

- Eye protection.
- Hearing protection.
- Safety footwear.
- Close-fitting clothing and restrained hair; avoid gloves near rotating cutters where entanglement may occur.
- Task-specific fall protection where work location requires it.

4. PRE-START CHECKS

Before commencing work, confirm that:

- Work surface is ferrous, sufficiently thick/flat/clean for adequate magnetic adhesion.
- Magnet base is clean and undamaged.
- Secondary restraint/safety chain is fitted where required, particularly on vertical/overhead work or where loss of magnet could cause a fall.
- Correct cutter is secure and serviceable.
- Electrical lead and controls are sound.
- Coolant/lubrication arrangement is suitable.
- Area below is controlled where slugs/swarf may fall.

5. SAFE OPERATING PROCEDURE

1. Clean and prepare the mounting surface.
2. Position the drill and engage the magnet.
3. Fit secondary restraint before drilling where required.
4. Confirm holding force before starting cutter rotation.
5. Select correct speed/cutter and apply coolant as required.
6. Start drill and feed cutter smoothly without excessive force.

7. Keep hands clear of rotating cutter and swarf.
8. Control the ejected slug and area beneath the cut.
9. Stop rotation before repositioning.
10. Isolate before cutter changes or swarf removal.

6. PROHIBITED PRACTICES

Workers must not:

- Use where magnetic adhesion is weak or uncertain.
- Rely solely on the magnet where a secondary restraint is required.
- Operate on painted, rusty, curved or thin surfaces without confirming adequate holding.
- Wear gloves near rotating parts.
- Remove swarf by hand while rotating.
- Use damaged cutters/leads.
- Place body beneath an unsecured overhead drill.

7. LOSS OF MAGNETIC HOLD

Power loss or poor surface contact can allow the drill to detach suddenly.

- Use secondary restraint where required.
- Keep base/contact surface clean.
- Do not position persons below the tool.

8. SWARF AND CUTTER SLUGS

Annular cutters generate sharp swarf and may eject a hot metal slug.

- Wear eye protection.
- Use tools to remove swarf after stopping.
- Control the drop zone.

9. FAULTS, DAMAGE AND ABNORMAL CONDITIONS

Stop for magnet movement, power interruption, cutter binding, abnormal vibration, damaged restraint, electrical fault or inadequate holding force.

Secure the drill before de-energising where necessary.

10. SHUTDOWN AND HOUSEKEEPING

- Stop rotation and isolate power.
- Allow cutter/slugs to cool.
- Remove swarf with suitable tools.
- Release magnet only when drill is physically controlled.
- Store drill/cutters and report defects.

11. EMERGENCY AND INCIDENT RESPONSE

1. Stop the equipment or activity immediately.

2. Isolate the hazard or energy source where safe to do so.
3. Provide or obtain first aid as required.
4. Notify the Foreman, Leading Hand or other authorised Illusions Australia representative.
5. Call emergency services where required.
6. Do not recommence until the incident, defect or unsafe condition has been addressed.

12. STOP WORK REQUIREMENT

Work must stop where:

- Adequate magnetic holding cannot be confirmed.
- Secondary restraint cannot be provided where required.
- Electrical supply is unsafe.
- People cannot be excluded from below.
- Cutter binds or tool moves.

No production requirement or deadline takes priority over safe work.

DOCUMENT CONTROL

Document	SWP 052 – Magnetic Drill
Document Type	Safe Work Procedure
Prepared By	Aidan McDonnell
Approved By	Managing Director
Status	Controlled Document